

Claim 41 is old claim 25. Claim 33 is old claim 26. Claim 34 is old claim 27. Claim 42 is old claim 28. and Claim 43 is old claim 29.

Thus, these new claims are allowed: 30,31,32,39,40,41,33, 34,42 and 43.

NEW CLAIMS MADE DEPENDENT FROM ALLOWED CLAIMS. THUS, ALSO ALLOWABLE.

The following claims were amended to be dependent from allowed claims. Accordingly, they are also allowable.

Claim 35 is old claim 11. Claims 36-38 are old claims 14-16. Claim 44 is old claim 19. Claims 45-47 are old claims 22-24.

Hence these claims are also allowable.

SECTION 102 REJECTIONS OVER CHOONG AND WEN-TUNG ARE BELIEVED OVER BY NEW CLAIMS 48

New claims 48, which is an independent claim, recites a measuring apparatus which employs a "removable" "container" into which the "unknown" and "known" DNA segments, for example, are inserted, and which by application of selective electric current causes their "hybridization". The "container" is removable and replacable with other "containers", so that rapid interchange of tests can be carried out simply and efficiently. There are "one or more electrodes" provided between which the "container" is placed. Then "means" are provided for "causing the hybridization" and also "means" are provided for reversing the current so as to separate wrongly paired segments. Clearly, none of the cited art has such concept of interchangeability and simplicity of mechanism

for DNA segment analysis.

In view of the foregoing, clearly, all of claims 30-48 are now in condition ~~for~~ allowance, and such allowance is respectfully solicited.

The inventor wish to also add the following technical comments.

"As for Chong, the configuration of our claims is not shown by Chong, which is totally different from our invention. Thus ,it is clear that our invention would not have been obvious even when Chong is extended.

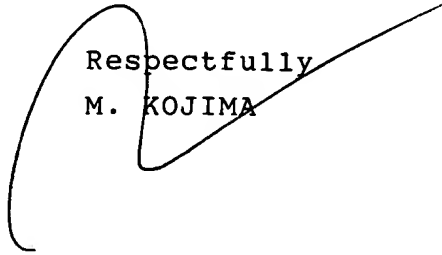
"The Examiner states that the "container" (10) of our invention is included in Chong's disclosure. However, in Chong's device, this is a "Substrate" NOT a "container". In our invention, a solution containing DNA is hermetically sealed in the "container". In contrast, Chong uses a solution which is not hermetically sealed even in the "substrate". Thus, the "substrate" of Chong is not anywhere similar to our "container"."

"As for Tung, clearly our recited invention is not shown by nor made obvious by Tung. Our invention is so different from Tung that no further comment is needed". No extension of Tung would make obvious our invention.

In view of the foregoing, reconsideration and allowance are respectfully solicited.

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Respectfully
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Claims 1-9 (cancelled previously)

Claims 10-29 (cancelled herewith)

30. (new) A measuring apparatus for measuring genetic sequence of electrically charged biopolymers by hybridization, said apparatus comprising:

a container that contains known and unknown biopolymer segments which are to be hybridized, said container being removable from said measuring apparatus; and

one or more electrodes disposed to be adjacent to said container for applying an electric field to said container, said one or more electrodes being electrically insulated from said container, and further being provided with protrusions formed at spatial positions corresponding to sites whereat gather a plurality of types of biopolymer segments within said container.

31.(new) The apparatus of claim 30, wherein conductive members are formed at spatial positions corresponding to said sites.

32.(new) The apparatus of claim 30, wherein said biopolymer segments are DNA, RNA, PNA, or electrically charged proteins.

33.(new) The apparatus of claim 30, wherein said container is made of a film, and said one or more electrodes are in mechanical contact with said container and are made of transparent film.

34. (new) The apparatus of claim 33, wherein said biopolymer segments are DNA, RNA, PNA or electrically charged proteins.

35.(new) The apparatus of claim 30, wherein said container is made of a film.

36. (new) The apparatus of claim 30, wherein said one or more electrodes are in mechanical contact with said container.

37.(new) The apparatus of claim 30, wherein said one or more electrodes are transparent electrodes.

38.(new) The apparatus of claim 37, wherein said one or more electrodes are made of ITO film.

39.(new) A measuring apparatus for measuring genetic sequence of electrically charged biopolymers by hybridization, said apparatus comprising:

a container that contains known and unknown biopolymer segments which are to be hybridized, said container being removable from said measuring apparatus;

one or more electrodes disposed to be adjacent to said container for applying an electrical field to said container, said one or more electrodes being electrically insulated from said container; and

means for altering direction of said electric field so that wrongly hybridized segment pairs are separated; wherein

said one or more electrodes are provided with protrusions formed at spatial positions corresponding to sites whereat gather a plurality of types of biopolymer segment within said container.

40.(new) The apparatus of claim 39, wherein conductive members are formed at spatial positions corresponding to said sites.

41.(new) The apparatus of claim 39, wherein said biopolymer

segments are DNA, RNA, PNA or electrically charged proteins.

42.(new) The apparatus of claim 39, wherein said container is made of a film, wherein conductive members are formed at spatial positions corresponding to said sites; and wherein said one or more electrodes are in mechanical contact with said container and are made of transparent film.

43.(new) The apparatus of claim 42, wherein said biopolymer segments are DNA, RNA, PNA, or electrically charged proteins.

44.(new) The apparatus of claim 39, wherein said container is made of a film.

45.(new) The apparatus of claim 39, wherein said one or more electrodes are in mechanical contact with said container.

46.(new) The apparatus of claim 39, wherein said one or more electrodes are transparent electrodes.

47.(new) The apparatus of claim 46, wherein said one or more electrodes are made of an ITO film.

48.(new) A measuring apparatus for measuring genetic sequence of electrically charged biopolymers by hybridization, said apparatus comprising:

a container that contains known and unknown biopolymer segments which are to be hybridized, said container being removable from said measuring apparatus;

one or more electrodes disposed so that said container is readily movable into a position adjacent thereto, said one or more electrodes being insulated from said container;

means for applying an electrical signal to said one or more electrodes to cause said unknown biopolymer segment to approach said known biopolymer segment to increase speed of hybridization; and

means for applying a reverse electrical signal to said one or more electrodes to separate wrongly hybridized biopolymer segment pairs.